

What is claimed is:

1. A fuel cell system comprising a fuel cell having one or more anodes, one or more cathodes and electrolytes respectively put therebetween, comprising:

5 a fuel supply unit supplying fuel to the anodes;
an air supply unit supplying air to the cathodes; and
a heat exchanger having a drain connected to the fuel supply unit, the heat exchanger exchanging heat between the air supplied to the cathode and exhaust gas exhausted from
10 the anode so as to condense water from the exhaust gas and discharge the water to the drain.

2. A fuel cell system comprising a fuel cell having one or more anodes, one or more cathodes and electrolytes respectively put therebetween, comprising:

15 a fuel supply unit supplying fuel to the anodes;
an air supply unit supplying air to the cathodes; and
a heat exchanger having a drain connected to the fuel supply unit, the heat exchanger exchanging heat between the fuel supplied to the anodes and exhaust gas exhausted from
20 the anodes so as to condense water from the exhaust gas and discharge the water to the drain.

3. A fuel cell system comprising a fuel cell having one or more anodes, one or more cathodes and electrolytes respectively put therebetween, comprising:

25 a fuel supply unit supplying fuel to the anodes; and
an air supply unit supplying air to the cathodes wherein

the air supply unit is configured to retrieve a portion of exhaust gas exhausted from the cathodes and admix the portion with the air supplied to the cathode.

4. A fuel cell system comprising a fuel cell having one
5 or more anodes, one or more cathodes and electrolytes respectively put therebetween, comprising:

a fuel supply unit supplying fuel to the anodes;

an air supply unit supplying air to the cathodes;

a heat exchanger having a drain connected to the fuel
10 supply unit; and

an outside air introduction unit introducing outside air and admixing the outside air with the exhaust gas from the cathodes prior to exhaustion of the exhaust gas to an outside.

5. A fuel cell system comprising a fuel cell having one
15 or more anodes, one or more cathodes and electrolytes respectively put therebetween, comprising:

a fuel supply unit supplying fuel to the anodes, the fuel supply unit including a mixing buffer tank;

an air supply unit supplying air to the cathodes; and

20 an outside air introduction unit introducing an outside air to an exhaust gas from the mixing buffer tank.

6. The fuel cell system of claim 1, wherein the fuel includes one or more liquid organic compounds having water solubility.

7. The fuel cell system of claim 1, wherein the fuel includes
25 one or more liquid organic compounds selected from a group of methanol, dimethyl ether and formic acid

8. The fuel cell system of claim 1, wherein the fuel is methanol.
9. The fuel cell system of claim 1, wherein the fuel supply unit pools concentrated methanol.
- 5 10. The fuel cell system of claim 2, wherein the fuel includes one or more liquid organic compounds having water solubility.
11. The fuel cell system of claim 2, wherein the fuel includes one or more liquid organic compounds selected from a group of methanol, dimethyl ether and formic acid
- 10 12. The fuel cell system of claim 2, wherein the fuel is methanol.
13. The fuel cell system of claim 2, wherein the fuel supply unit pools concentrated methanol.
14. The fuel cell system of claim 3, wherein the fuel includes
- 15 one or more liquid organic compounds having water solubility.
15. The fuel cell system of claim 3, wherein the fuel includes one or more liquid organic compounds selected from a group of methanol, dimethyl ether and formic acid
16. The fuel cell system of claim 3, wherein the fuel is
- 20 methanol.
17. The fuel cell system of claim 3, wherein the fuel supply unit pools concentrated methanol.
18. The fuel cell system of claim 4, wherein the fuel includes one or more liquid organic compounds having water solubility.
- 25 19. The fuel cell system of claim 4, wherein the fuel includes one or more liquid organic compounds selected from a group

of methanol, dimethyl ether and formic acid

20. The fuel cell system of claim 4, wherein the fuel is methanol.

21. The fuel cell system of claim 4, wherein the fuel supply
5 unit pools concentrated methanol.

22. The fuel cell system of claim 5, wherein the fuel includes one or more liquid organic compounds having water solubility.

23. The fuel cell system of claim 5, wherein the fuel includes one or more liquid organic compounds selected from a group
10 of methanol, dimethyl ether and formic acid

24. The fuel cell system of claim 5, wherein the fuel is methanol.

25. The fuel cell system of claim 5, wherein the fuel supply unit pools concentrated methanol.

15 26. The fuel cell system of claim 1, wherein the air supply unit is configured to retrieve a portion of exhaust gas exhausted from the cathodes and admix the portion with the air.

27. The fuel cell system of claim 1, further comprising an outside air introduction unit wherein the outside air
20 introduction unit introduces outside air and admix the outside air with the exhaust gas from the cathodes prior to exhaustion of the exhaust gas to an outside.

28. The fuel cell system of claim 1, further comprising a mixing buffer tank and an outside air introduction unit wherein
25 the outside air introduction unit introduces outside air to an exhausted gas from the mixing buffer tank.